and 82 percent, respectively. The patient was fitted with a postauricular hearing aid for the postoperative ear and thereby obtained successful binaural hearing function.

Gentleness is extremely important to preserve cochlear function at removal of acoustic neurilemmomas. Gentleness is aided by microinstrumentation and surgical craft.

The chances of preserving hearing function at acoustic neurilemmoma excision increase with earlier diagnosis, surgical experience, better instrumentation and attempts at prevention of surgically induced vasospasm of the microvasculature to the cochlea.

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Avoiding Mismanagement of a Paralyzed Face

THE PRINCIPLES of evaluation and care of a paralyzed face are not well known in the medical community, although the facial nerve is the most commonly paralyzed motor nerve. A paralyzed face has considerable emotional, physical and economic consequences for the patient. The observation of a prolonged total, slowly progressive or recurrent facial paralysis suggests neoplasm and mandates a careful diagnostic evaluation. In addition, trauma, infection and diabetes are common etiologic factors in seventh nerve paralysis. The art of prevention and management of problems of paralyzed faces has improved greatly during the past 15 years.

Clinicians should not be deceived that all facial palsies are Bell palsy (spontaneous idiopathic facial palsy) and that recovery will occur without incident. Careful evaluation and follow-up is always necessary. There are five findings related to facial motor function that tend to rule out Bell palsy:

(1) Simultaneous bilateral facial palsy.

(2) Recurrent unilateral facial palsy. In approximately 30 percent of cases tumors are present.

(3) Unilateral facial weakness which slowly progresses beyond three weeks. This is classically seen with neoplasm.

(4) Slowly progressive unilateral facial weakness associated with facial hyperkinesis.

(5) No return of facial function within six months following an abrupt onset of facial paralysis should strongly suggest a tumor.

Sparing of the forehead in facial paralysis has always suggested a central disorder. However, it is now well-established that the lesion may be peripheral. The orderly spacial arrangement of the facial nerve in the temporal bone can allow partial paralysis to occur.

Topographic diagnostic tests of the seventh nerve function should always be done on a patient with a paralyzed face that is complete, progressive or recurrent. Acoustic reflex studies, comparisons of lacrimal gland function and salivary gland function with the normal side, and taste and electrical tests help isolate the lesion. In addition, the adjacent eighth nerve function (both cochlear and vestibular) should be evaluated and radiographic studies of the temporal bone should be done.

Modern microsurgery has greatly improved the operative management of seventh nerve lesions and their sequelae. Care of paralyzed faces encompasses a host of dynamic and static procedures. Dynamic techniques include surgical removal of neoplasms, correction of traumatic defects, pressure, primary nerve suturing, nerve grafting, anatomic rerouting, seventh nerve crossover from the opposite uninvolved seventh nerve, seven nerve to twelve nerve anastomosis and nerve muscle pedicle grafts. There are now surgical techniques for repair of facial nerve defects intracranially in the internal auditory canal, within the temporal bone and external to the stylomastoid foramen in the soft tissues of the face. A primary seventh nerve repair including grafting is highly successful. Prolonged facial muscle viability may continue despite denervation and allows successful facial nerve repair years after the initial injury.

Static procedures involve (1) resection of redundant skin, (2) fascia lata strip suspension of the face and (3) weakening of the contralateral nonparalyzed musculature. In addition, certain adjunctive procedures complement the basic static and dynamic operations. These include (1) resection of a ptotic melolabial fold, (2) plication of parotid-masseteric fascia, (3) dermal graft suspension, (4) blepharoplasty, (5) brow lift, (6) canthoplasty, (7) horizontal shortening of the lower lid, (8) fascial suspension of the lower lid and (9) palpaebral spring.

Medical management includes care of the paralyzed orbit (half-moon-shaped paper tape fixed to the upper eyelid to stiffen and partially close the eye, used with glasses to prevent drying and frequent application of artificial tears), physiotherapy, and management of inflammatory and metabolic diseases including Bell palsy.

Counseling a patient with a paralyzed face is vital. A patient with facial palsy should be informed of the diagnosis, the type of lesion, etiologic factors and the significance of the results of the diagnostic tests. The patient also should be instructed carefully about management, expected timing of recovery, and the recommended sequence of medical and surgical procedures—including alternatives to them.

A patient with paralysis and distortion of a portion of his face must live with a severe social and functional handicap. The influence of gravity combined with the unopposed antagonistic pull of the opposite mimetic musculature of the face creates an extremely harsh bearing. Topographic testing to locate the site of the lesion of a paralyzed face is now well established. Modern microsurgical techniques used with dynamic and static procedures are highly successful for partial correction of paralyzed faces.

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Craniofacial Surgical Operation For Head and Neck Neoplasms

LARGE TUMORS of the head and neck generally are considered to be unresectable if they have become fixed to the base of the skull. For certain portions of this region this is very true; for example, excisions of the clivus must be limited to small peek holes because of the proximity of the pons and the certainty of sudden death if a major portion of this part of the sphenoid is removed. Thanks to the pioneering work of Lewis, Klopp, Smith and Ketchum, lesions of the head and neck that are fixed to the floors of the anterior and middle cranial fossae have become amenable to resection with a respectable chance of tumor ablation.

The ethmoidal and frontal sinuses and the nasal roof border on the anterior fossa. Spread occurs by extension through the posterior wall of the frontal sinus, or superiorly through the fovea ethmoidalis or the cribriform plate. The infratemporal fossa, the pterygomaxillary space, the sphenoid sinus and the temporal bone are adjacent to the floor of the middle fossa. Lesions of the nasopharynx, maxillary sinuses and nasal cavities may spread directly to these areas and thereby gain access to this part of the cranial cavity.

The most common benign lesion that may extend into the cranial cavity in this fashion is the juvenile nasopharyngeal angiofibroma. Its usual mode of intracranial extension is via the infratemporal fossa, through the greater wing of the sphenoid into the middle fossa. It may exert pressure on the orbital apex causing proptosis. Transfacial excision of such a lesion carries high mortality because of the difficulty in controlling extradural hemorrhage from the tumor vessels supplied by the internal carotid system. This supply is confirmed by angiography.

Carcinoma of the paranasal sinuses spreading to the cranial cavity by erosion through the floor of the anterior cranial fossa may fix to dura or invade the frontal lobes. Tomography in the Caldwell position usually shows the site and extent of this bone erosion. Tumors of the ear, such as glomus jugulare tumor and squamous and basal cell carcinoma, have been successfully treated using a combined approach since the early work of Campbell. Temporal bone polytomography and computerized axial tomography have greatly improved the assessment of extension of these tumors.

Craniofacial operations require the close cooperation of a neurosurgeon and otolaryngologist. Tumors that involve the anterior fossa and anterior reaches of the middle fossa are reached through a frontal and anterolateral craniotomy, respectively. A coronal or anterolateral scalp incision is made and a sterile towel covered with an antibiotic-soaked sponge is sutured to the base of the flap. This isolates the intracranial from the transfacial part of the operation. After a cranial bone flap has been removed the tumor is exposed from above and any involvement of dura or brain is excised. The dura is repaired with a fascia graft. The transfacial portion is dissected free and then with the neurosurgeon working from above, the tumor is delivered through the facial incision. The cavity is skin grafted and any cerebrospinal fluid that was removed earlier in the procedure is injected into the ventricular system to help fill out